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An automated diagnostic system for ICE

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Abstract

© 2018, Institute of Advanced Scientific Research, Inc. All rights reserved. An automated system for testing diesel engines based on a neural network is considered. A neurofuzzy system has been designed to form fuzzy rules for diesel engine control during its testing Expansion of production of cars, tractors and their increasing role in meeting the needs of modern society leads to a continuous improvement of power units of cars - diesel engines. Declared capacity, economy, toxicity and other evaluation parameters of the diesel engine, as well as its reliability and durability, are established by testing in stand and operating conditions. Currently, all newly created, upgraded and serial engines of cars and tractors subject to different types of tests, the essence, volume and content of which is determined by their purpose and stipulated by GOST. Tests constitute the final stage of the complex process of creating and improving diesel engines. All kinds of new, modernized and serial engines are subjected to various types of tests in this connection. The tests allow to evaluate the quality of the diesel engine and compare its performance with the performance of other engines. In the process of testing determine the traction-dynamic, economic, environmental and other parameters of the engine and establish the compliance of these indicators with standards and technical conditions. During the tests, the peculiarities of this diesel are revealed, and comparing the results of tests of various types of engines, it is possible to evaluate the efficiency of design features, the quality of manufacture or their technical condition. At present, testing of diesel engines is a complex and time-consuming technological process, which differs little from an experimental study. Therefore, automated testing systems (ATS) for engines are created.

Keywords

Automation, Diagnostic, Internal combustion engine, Neural network, Test

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